

THIRD CONTRIBUTION TOWARDS A NEW CLASSIFICATION OF
AUSTRALIAN ASILIDAE.

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Introduction.

About 80 years ago Loew laid the foundation for a classification of Asilidae, with three sections of subfamily rank; to these a fourth was added by Schiner. Various other writers have classified the Asilidae on this basis, either accepting or disregarding the fourth subfamily Leptogasterinae. Many of the papers made advances on Loew's work, but apparently the basis was accepted as more or less satisfactory; in other cases attention has been drawn to the unnatural status of the system which is now becoming more widely recognized as being quite inadequate for modern needs. Several authors have pointed out the impossibility of maintaining a distinction between Dasypogoninae and Laphriinae under the existing definitions, whilst others have apparently been satisfied with their status. On the whole no actual movement was made towards the betterment of the classification of the Asilidae.

Some of the more recent works have incorporated a study of the larvae and pupae and along these lines Melin seems to have achieved the nearest to a constructive criticism of the position. He pointed out that genera grouped under the Dasypogoninae are considerably more heterogeneous than those of the Laphriinae and Asilinae; the discrepancies in the larval characters are referred to in this respect and he then proceeds: "Now as the Dasypogonina flies and pupae do not show any great degree of accordance with one another either, I do not consider that what has hitherto been known as the Dasypogonina species can be brought together under one group ranking with the Laphriina and Asilina subfamilies. Instead of this they ought to be divided amongst several groups, which of course cannot be delimited in detail until some future date. With regard to the genus *Leptogaster* that is widely separated from most of the other Asilids not only through several imago characters . . . but also through several characters in their stages of development" (Melin, 1923, pp. 206-7).

Melin's criticism, based as it is upon biological grounds after about ten years' intensive study, must bear greater weight than any criticism levelled against it on general grounds, and to a great extent it justifies my action in gathering together the related Australian genera, showing affinities to each other, into groups, these groups being based upon characters of a fundamental nature rather than those that have so long been accepted in the systems adopted after Loew and which are found so futile for the Australian element.

With the present paper will be found a study of the prothorax of the Dasypogoninae, this structure having a character of tribal importance. It has

enabled me to propose a new tribe which, though defined, is left unnamed pending further information. Following on Hermann, the tribe Laphriini is divided also.

In concluding these remarks, I would express my indebtedness to Professor R. H. Painter who has kindly supplied me with a few North American Asilidae, one genus of which comes well within a new tribe proposed hereunder. Also Mr. E. Jarvis has kindly allowed me to retain for study some described North Queensland Laphriini and Atomosiini that he submitted for determination some years ago. These especially have been valuable towards drawing up a comparative study based upon Hermann's paper of 1912.

On the prothorax of the Dasypogoninae.

In the Brachyrrhopalini, a tribe of undoubted homogeneous nature, the prothorax plate which is placed ventrally and adjacent to the anterior coxae, is distinctly separated from the dorsal portion of the prothorax by a definite membrane that, in some cases, is larger than normally found, and sometimes there are wrinkles in this membrane that indicate its probable flexibility when in the living state. The actual size of the ventral plate is sometimes a little smaller than usual, but invariably the membrane folds beneath its lateral edges.

In the Saropogonini, including *Thereutria* and *Metalaphria*, but excluding *Clinopogon* and *Cryptopogon*, the defined genera have the ventral plate clearly perceptible, but as in the Brachyrrhopalini, there would appear to be gradations with respect to the density of the membrane, some being of a sturdier form than others.

In the Phellini, *Phellus* has the plate amalgamated with the other parts, but ridges mark lines of fusion, so it would appear here as if the membrane had become completely chitinized; on *Psilozona* the membrane is normal.

Finally, in the Laphriini there are no signs whatever of the components of the prothorax, the whole having a smooth surface of uniform chitinous nature; the same applies to the Atomosiini.

A NEW TRIBE.

The two exceptions mentioned above under the Saropogonini, namely *Clinopogon* and *Cryptopogon*, to which must be added the American genus *Neopogon* and possibly others, all have the prothorax similar to the Laphriini type. All disagree with the Laphriini in the nature of the female genital parts, the shape of the head, venation and sundry other characters, whereas they agree in these matters amongst themselves. They will form a new tribe divided from the remainder of the Saropogonini in the nature of the prothorax and in the front. I have not seen *Stichopogon*, so am uncertain if this genus is related.

CRYPTOPOGON White.

White erected this genus for a somewhat Therevid-like Asilid, having an interradiated crossvein. It comes near *Clinopogon* and is not easy to distinguish from small specimens of that genus. I have before me an undoubted *Cryptopogon* that is without the interradiated crossvein, but compares very favourably in all other respects; the venational character would therefore appear to be specific, not generic, in importance. The characters of the genus would thus be:—

Front very broad at summit, very narrow at antennae, face widens from there (this apparently is a tribal character). Antennae with the fourth segment rather long, about twice as long as broad. Moustache composed of a number of bristles

in a dense mass restricted to an area near the oral margin (White states "confined to" but that term is a little misleading as there is more than one row of bristles). Prothorax of one piece; scutellum without bristles; abdomen of moderate length, parallel-sided. Femora somewhat swollen (apparently another tribal character); tarsi with extra long bristles. Venation with or without an interrarial crossvein; all marginal cells open, except the anal which is closed slightly before the margin.

CRYPTOPOGON OBSCURUS, n. sp.

A brownish species with much white tomentum which completely covers the face and forms a pattern on the dorsal area of the thorax. Abdomen black, with white tomentose side spots and more or less interrupted cross bands at base of segments; tomentum also on coxae and traceable on femora. Hair on front and bristles behind ocelli black, elsewhere on head white. On thorax and abdomen the hair is mainly black, but white hair occurs in places. Hair on legs white, bristles there both black and white. Legs mainly black, but basally the tibiae are brownish to a varying extent. Wings hyaline with a strong tendency towards dark infuscations at crossveins. In other respects White's specific description of *C. vernaculus* also applies to the present form, but it is at once distinguished by the lack of the interrarial crossvein, the black spots at crossveins and the darker legs.

Length, 7-8 mm.

Hab.—Queensland: Sunnybank, near Brisbane, 2 males and 2 females. November, 1925, 1927 and March, 1928. Occurs in the bush on the ground, but its small size and obscure colouring make it very difficult to detect. *C. vernaculus* also occurs in Queensland, but seems to be confined to more inland districts.

Tribe Saropogonini.

CHRYSEUTRIA, n. gen.

Antennae with four segments and a minute apical spine; moustache confined to a row of oral bristles. Thorax with a lateral spine just anterior to the transverse suture as in *Chrysopogon*; prothorax with ventral plate clearly defined; scutellum without bristles. Abdomen rather long and parallel-sided, each segment slightly bulging on the dorsal area; genital spines of the female conspicuous; first segment with an apical lateral spine. Legs with a spur on the anterior femora. Wings with all marginal cells open.

This genus differs from *Chrysopogon* and its allies in the structure of the female genitalia and in the more generalized type of abdomen being parallel-sided and more elongate, whereas on *Chrysopogon* it expands from the base towards the apex. From *Thereutria* and its allies it is distinguished by the presence of the thoracic spine and again in the abdomen, that of *Thereutria* tapering towards the apex. The genus belongs to the Saropogonini.

CHRYSEUTRIA NIGRINUS, n. sp.

Black with white tomentum and hairs. Head of usual shape; the white tomentum runs from the oral margin in two broad lateral stripes, meeting on the area surrounding the base of the antennae. The moustache is formed by an irregular row of about 16 white, more or less parallel bristles. Palpi and antennae with mainly black hairs. The whole area behind the eyes is completely covered with white tomentum and long white hairs are fairly plentiful there, but two pairs of black bristles occur behind the ocelli, arranged in a transverse row. Some white tomentum occurs conspicuously on the prothorax, from the humeral tubercle,

along the lateral suture, and on to the scutellum; also along the transverse suture and as a very faint design on the dorsal area. It also occurs over the larger part of the ventral area. On the abdomen it lies along the transverse marginal sutures and forms up to five pairs of lateral spots, one on each basal segment. Coxae with white hairs and tomentum. Femora very scantily supplied with short hairs and these are sometimes black; long white hairs occur on the ventral area of the anterior pair. A row of scattered black bristles is on the posterior side of the anterior femora, on both sides of the intermediate, and on the anterior side of the posterior femora. Tibiae and tarsi studded with short white depressed hairs and black bristles. Halteres yellow. Wings suffused with black-brown, very heavily so along the veins.

Length, 14-15 mm.

Hab.—Queensland: Sunnybank, near Brisbane. Two females, November, 1927. The holotype was taken flying backwards and forwards from a termite's mound to a spray of tall grass in seed, a distance of about two or three feet, coming to rest at each visit. The paratype was captured about a fortnight later, thirty yards from the same place with an Eumenid wasp as prey; it was skimming an inch or two above the grassy ground, not attempting to rest. These were the only two seen, and it has not been detected in any other collection. It might readily be mistaken for a *Chrysopogon*, but apparently it has not been described under that genus.

Genus NEOSAROPOGON Ricardo.

The type of this genus was fixed in 1921, namely *Dasypogon princeps* Macquart, but recently it has become evident that more than one form might have been placed under the name by Ricardo. In the original definition is recorded "the absence of any style to the third segment of the antennae". Hitherto I had not met with any specimen in Australian collections agreeing in this character, but now I have a pair from Brisbane that misses the fourth segment. On re-examining the material in the Ferguson, the Queensland Museum and the Australian Museum collections, I find a variation in the size of the fourth segment (so called style) and also variations in markings, but judging from the Queensland pair referred to there is a tendency to dimorphism which complicates the study.

Tribes Laphriini, and Atomosiini, n. trib.

Hermann in 1921 divided certain Asilids into Acanthocneminae, which have a spur on the anterior tibiae, and the Eremocneminae which are without the spur. The latter is again divided into the Atomosiinae and Laphriinae.

It will readily be seen that *Thereutria* and *Metalaphria*, if placed in the subfamily Laphriinae as originally done, would fall into the first of these major divisions, but their affinities are too close to the Saropogonini to permit separation under such an arrangement. Hermann placed four genera in his first division, but I do not know how they compare with the Australian genera.

Judging from the complex hitherto placed in the tribe Laphriini, the Australian forms would contain, under Hermann's group Laphriinae, all the species recognized as being *Laphria*, also *Nusa queenslandi* Ricardo and *Laphria tectamus* Walker. The last of these Bigot placed in the genus *Andrenosoma*, and there can be little doubt such a position is superior to that of *Nusa* where Ricardo placed it. Although having the venation comparable to the last form, *Nusa queenslandi* seems to have more affinities with *Laphria*, and taken as a whole all these, and presumably

Maria, would form the tribe Laphriini as opposed to the remainder, the Atomosiini. To this extent the Australian forms uphold Hermann's groups, but suitable characters for dividing them into tribes have not yet been fully ascertained. As an immediate guide the manner in which the veins M_3 and M_4 coalesce may be used. Under the tribe Atomosiini come *Atomosia*, *Aeolus* and *Cyanonedys*.

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